

CHAPTER 3 SITE PLAN DESIGN

3.1 PURPOSE

This chapter is intended to provide those seeking access entrances to state-maintained roadways and/or who wish to construct subdivision streets that will to be maintained by DelDOT with:

- Specific standards and design guidance needed to assure adequate site plan design in the development of site transportation facilities; and
- The elements that need to be provided to DelDOT on the site plan and site street plan so that DelDOT can provide the applicable local land use agency with a No Objection to Recordation Letter; and

In most cases, if the requirements of this chapter are met, the result will be the issuance of a “No Objection to Recordation” letter from DelDOT to the local land use agency.

Site plans shall be in the format required by the land use agency. The elements that DelDOT requires as part of this chapter shall be added to those plans.

The standards established by DelDOT reflect the best judgment as to design criteria for particular conditions. In addition to safety considerations, particular emphasis is given in this chapter to incorporating design elements that address multi-modal access to and through the development. The Applicant’s site plan must be completed within the context of the

surrounding area, providing street types and connections consistent with the needs of the existing and future transportation network. Requirements for transportation facility right-of-ways, traffic calming, and operational analysis are also addressed in this chapter.

Design features that fall outside normal design criteria and accepted practice are to be determined using sound engineering judgment and should be thoroughly documented. The final design must meet the needs and expectations of DelDOT and the community, as well as providing for the users’ safety.

3.2 MINOR RESIDENTIAL SUBDIVISIONS

If a property owner is seeking to subdivide its property into five or less lots through the local land use agency process and is not constructing any internal subdivision streets, the property owner must coordinate access with DelDOT. DelDOT has established requirements for access, drainage, and adequacy of adjacent roadway right-of-way. These elements will have to be addressed prior to DelDOT issuing its “No Objection to Recordation” letter.

Chapter 9 outlines the minimum standard for the spacing of residential drives and shall be used to determine entrance locations. If this spacing cannot be met for each individual lot, pairs of lots shall be required to have combined access.

3.2.1 PERMIT APPLICATION PROCESS

An initial stage fee calculation form (see Appendix C) and fee is to be submitted with six copies of plans, which include the entrance drawing, to the Public Works Engineer of the District in which the construction shall take place. If revisions are required, three corrected copies shall be submitted to the appropriate section.

3.2.2 PLAN REQUIREMENTS

The access to subdivided lots on the Functional Classification Network shall be clearly portrayed on the subdivision plan.

The location and design of driveways and entrances shall meet the general geometric requirements of DelDOT. In addition, sight distance and drainage requirements shall conform to Sections 5.4 and 5.7 of these *Standards and Regulations for Subdivision Streets and State Highway Access*.

The plan for a residential strip development on a State-maintained roadway shall include:

1. A title block containing:
 - a. Name of proposed residential strip development.
 - b. Name of nearest town or county.
 - c. Maintenance number of highway being accessed.
 - d. Graphic Scale (1" = 30' preferred, 1" = 20' acceptable).
 - e. Date.
 - f. Name, address, and telephone number of engineer or surveyor preparing plan.
 - g. Seal of engineer or surveyor (Delaware License).
2. A data block containing:
 - a. Gross acreage of property.
 - b. Zoning.
 - c. Present use.
 - d. Proposed use.
 - e. Sewer.

- f. Water.
- g. Tax Parcel Number.
- h. Total number of lots.

3. The following note shall be added to the minor subdivision record plan:

If the residential lands of the applicant are ever developed into a major subdivision, then the access to these parcels shall be from an internal subdivision street.

4. The access to subdivided lots along the Functional Classification Network will be clearly portrayed on subdivision plan. See Chapter 7 for detailed access requirements.

3.2.3 APPROVAL

The applicant shall make revisions or additions to the design upon receipt of comments from DelDOT. Once all comments have been addressed, DelDOT will issue a "No Objection to Recordation" to the local land use agency.

When access provisions cannot be provided in accordance with DelDOT's requirements due to limitations particular to the site or where the applicant refuses to comply, the access application for the intended use may be denied. DelDOT will issue an "Objection to Recordation" to the local land use agency.

3.3 COMMERCIAL OR MAJOR RESIDENTIAL SUBDIVISIONS

If a property owner / developer is seeking to subdivide their property into six or more residential lots and are constructing internal subdivision streets or are developing a commercial site through the local land use agency process, they must coordinate access with DelDOT. Furthermore, the developer shall submit the following two required plans to DelDOT for review and approval prior to DelDOT issuing its "No Objection to Recordation" letter to the local land use agency.

1. Site Plan – The site plan shall be in the format required by the local land use agency supplemented with DelDOT’s requirements as outlined in Section 3.4. These elements shall be addressed prior to DelDOT issuing its “No Objection to Recordation” letter.
 2. Site Street Plan – The site street plan is required by DelDOT and shall contain connectivity elements outlined in Section 3.5. These elements shall be addressed prior to DelDOT issuing its “No Objection to Recordation” letter.
- c. New street names (if applicable).
 - d. New street right-of-way widths (if applicable).
 - e. Future interconnection note (if applicable).
 - f. Dimensions of relevant physical features.
4. Preliminary entrance plan shall include but not limited to the following (see Chapter 4 for complete list of requirements).
 - a. Traffic generation diagram.
 - b. Adjacent entrances.
 - c. Functional classification of adjacent roadway.
 - d. Layout of required auxiliary lanes.
 - e. Sight distance calculations.
 - f. General Notes as listed in Appendix J.

Refer to Sections 4.3 and 4.4 for subdivision construction plan and commercial entrance plan requirements respectively. Also see Chapter 6 for permit application process.

3.4 SITE PLAN REQUIREMENTS

The site plan shall be prepared in accordance with the local land use agency’s requirements. The following elements are supplemental information required by DelDOT to be addressed and/or included on the site plan.

These elements shall be addressed prior to DelDOT issuing its “No Objection to Recordation” letter to the local land use agency. For a complete checklist see Appendix D.

1. Initial stage fee calculation forms.
2. Notes:
 - a. Note outlining the date a traffic impact study was completed and requirements submitted to the local land use agency (if applicable).
 - b. Note outlining any traffic improvement.
 - c. Note specifying the maintenance of the proposed subdivision streets (if applicable).
3. Site Plans:
 - a. Adjacent existing roadway rights-of-way.
 - b. Label any necessary right-of-way or easement dedication or reservation.

3.4.1 SITE ENTRANCE

Intersections of subdivision streets with State-maintained roadways are to be designed in accordance with these *Standards and Regulations for Subdivision Streets and State Highway Access*. The location and design of entrances and exits onto State-maintained roads are governed by the criteria established in Chapter 9 and the detailed design elements listed in Chapter 5.

Site plans should include a preliminary entrance design and preliminary street construction plans if applicable as outlined in Section 4.1. Considerations must be given to the location of the entrance to ensure the necessary elements listed in Section 5.2 can be met.

3.4.1.1 Traffic Information

The site plans must show:

- Traffic generation and distribution for the site.
- Truck percentage for the site.
- Existing and projected (10-year) volumes for the site, (*DelDOT will provide projected volumes upon request*).
- Existing and projected (10-year) directional distribution volumes for the adjacent

roadway(*DelDOT will provide projected volumes upon request*).

- Posted speed limit.
- Existing and proposed school bus routes and volumes.

3.4.1.2 Adjacent Entrances

All site plans and Site Street Plans for commercial or residential subdivision access onto a State-maintained roadway must show the location of existing and proposed entrances according to Figure 3-1. This distance is required for each side of the entrance and shall include entrances on both sides of the road. If there are no entrances within this distance, then show the distance to the nearest entrance.

Figure 3-1 Requirements for Adjacent Entrances on Site Plans

Roadway with Posted Speed Limit	Show Entrances Within*
35 mph or less	300 feet
40 – 45 mph	450 feet
50 – 55 mph	600 feet

* Distances measured from site access

The type of use served by each entrance shall be noted as well as any restrictions in movements.

3.4.1.3 Existing Roadway Features

Each site plan shall clearly show the lane configuration of the existing roadway, including any turn lanes, shoulders, bike lanes, existing right-of-way, utilities, drainage features, pedestrian and transit facilities. All drawings shall be to scale.

3.4.1.4 Gateway Feature Easements

An easement shall be established at the entrance of all subdivisions for the purpose of a planned or future neighborhood sign or structure. This easement shall be located outside

of any existing or proposed right-of-way. If there is no easement area available because of limited site frontage, provisions may be made to locate the gateway feature within the right-of-way provided that a right-of-way use agreement is executed and the gateway feature does not pose a sight distance or safety hazard. The ability to locate a gateway feature within the right-of-way will be at the sole discretion of DelDOT.

3.5 CONNECTIVITY

3.5.1 PURPOSE AND SCOPE

The purpose of this Section is to set forth requirements for achieving a connected transportation system in the State of Delaware.

When local travel is restricted by a lack of connecting routes, local trips are forced onto the regional network. The aggregate effect of a disconnected local street network will be to reduce the effectiveness of the overall regional and local roadway system.

In addition to improving the flow of through trips on DelDOT collector and arterial streets, interconnections will provide Delaware residents and travelers with the following benefits:

- Alternative routes to local destinations to provide redundancy during road closures;
- Opportunities for community interaction by eliminating barriers between developments;
- Alternative mode choices (driving, transit, bicycling or walking);
- Improved access to community facilities and shopping centers;
- A reduction in travel times and vehicle miles traveled for trips to local and regional destinations;
- Improved air quality because of reduced delay;
- Reduced emergency response times because of more direct access for fire, police and EMS vehicles;

- More effective use of municipal resources for municipal service delivery (utility routing, sanitation vehicles, school bus routing, etc.); and
- Improved regional long-distance travel as arterial road capacity is better utilized for regional trips through the transfer of local trips to local roads.

The connectivity requirements in this section are provided so that the hierarchy of streets (including bicycle and pedestrian connections) is used most effectively to encourage safe and efficient circulation and access for motor vehicles, bicycles, pedestrians, and transit.

3.5.2 OVERVIEW AND APPLICABILITY

This section provides connectivity requirements for all development projects having access to state roads and/or proposing DelDOT maintained public roads for subdivisions.

Applications for parcels of less than 5 acres shall include on their site plan any road proposed as part of an approved Local Transportation Circulation Plan. Proposed development parcels less than 5 acres shall be designed to connect to existing linkages on adjacent parcels.

For all residential, mixed-use, or commercial developments or redevelopments 5 acres or larger, the Applicant shall submit as part of a complete application to DelDOT, a “Site Street Plan” (SSP) as provided for in Section 3.5.3.

Requirements for requests to address connectivity through alternate provisions are addressed in Section 3.5.8.

3.5.3 SITE STREET PLANS (SSP)

3.5.3.1 Objectives of the Site Street Plan

The SSP shall be developed to provide or incorporate a street system that will allow access to and from the proposed development, as well

as access to all existing and future development within the SSP Area. The SSP shall attain the following objectives:

- Encourage pedestrian and bicycle travel by providing short, direct public right-of-way routes to connect residential uses with nearby existing and planned commercial services, schools, parks and other neighborhood facilities; and
- Provide bike and pedestrian access ways or walkways on public easements or right-of-way when full street connections are not possible, at spacing that shall be consistent with the provisions of Section 3.5.4 except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers; and
- Identify and, where possible, create opportunities to extend and connect local streets in previously developed areas; and
- Serve a mix of land uses on contiguous local streets; and
- Encourage compliance with posted speed limits; and
- Consider narrow street design alternatives that feature total right-of-way of no more than 50 feet, including pavement widths of no more than those noted in Sections 5.22 and 5.23 of Chapter 5, sidewalk widths of at least five feet and landscaped pedestrian buffer strips that include street trees; and
- Limit the use of cul-de-sac designs and closed street systems to situations where topography, preexisting development or environmental constraints prevent full street connections. . Include a street design that accommodates and promotes multi-modal access (buses, bicycles and pedestrians) to land uses, improves area circulation, and reduces out-of-direction travel.

3.5.3.2 Site Street Plan Content

1. SSP Dimension and Scale

The SSP shall be a plan sheet or sheets, produced separately from the site plan, that shows all proposed subdivision roads for the project and

all DelDOT Local and higher order roads within a one mile radius of the center point of the project. The one mile radius from the center point shall be known as the “SSP Area”.

The SSP shall be produced at a scale sufficient to provide information about how the proposed development’s transportation network will be connected to surrounding parcels and the overall SSP Area transportation network.

2. Identification of Connections to Multiple Local or Higher Order Roads.

- a. The SSP must show connections from the development to at least three different Local or higher order roads. Each such identified road must be situated in a different compass direction from the development parcel. The connection may be shown either directly from the development or through connections to other parcels within the SSP area.
- b. If requested by the Applicant, DelDOT may, in its sole discretion, determine that unusual topographic features, existing development, or a natural area or features exist to make a connection infeasible (Infeasibility Determination) and permit the Applicant to show fewer than 3 connections to higher order roads on the SSP.

3. Adjacent and Opposite Parcel Information

The Applicant shall identify the following information from adjoining and opposite land parcels on the SSP:

- The location and spacing of existing or proposed stub streets that intersect with or connect to the Applicant’s proposed development site;
- The location of any Type III subdivision street, Local or higher order road within the adjacent parcel, whether or not such road would connect to the Applicant’s proposed development site;
- The location and spacing of existing or proposed bicycle and pedestrian connections, including bicycle striping

on roadways, sidewalks, and shared-use trails;

- Identification of the existing and proposed land uses adjacent to and opposite the site; and
- Adjacent and opposite parcel access driveways and entrances showing dimensions, location and spacing of any access entrances located within the distances indicated in Section 3.4.1.2.

4. Existing Transportation Network

In addition to the information to be provided for the land parcels adjacent to and opposite the proposed development, the Applicant shall also identify on the SSP:

- All existing Local and higher order roads within the SSP Area; and
- Any local or higher order road that has been identified for construction in an Approved Local Transportation Circulation Plan, including SSPs that have been previously approved by DelDOT and the local land development authority. Planned roads that have not yet been constructed shall be indicated on the SSP.

5. Proposed Transportation Network and Connections

The proposed transportation network for the SSP shall be determined based on the following criteria:

- a. Proposed roadways and connections identified in an Approved Local Transportation Circulation Plan shall be included in the transportation network. DelDOT shall determine if an Approved Local Transportation Circulation Plan is complete or if it should be supplemented to accommodate the proposed development or for modifications to the SSP Area since the approved plan was completed;
- b. Local and higher order DelDOT road spacing at distances not exceeding 2640 feet (1/2 mile);
- c. Type III Subdivision Streets at a spacing of at least every 1,320 feet (one-quarter mile);

- d. Type I and Type II Subdivision or, if applicable, Industrial Street spacing at intervals of no more than 660 feet; and
 - e. Pedestrian and bicycle accommodation spacing as identified for Development Area types as described in Section 3.5.4.
6. Local and Higher Order DelDOT Road Information and Requirements
- a. The Applicant shall be required to provide direct connection to all Local or higher order roads identified in Section 3.5.3.2.2 that abut or traverse the Applicant's property.
 - b. If fewer than the three local or higher order roads traverse or abut the Applicant's property, the Applicant will be required to provide at least one connection to one of the identified roadways and shall construct that portion of the other connections that traverse the Applicant's property consistent with the provisions of the Construction paragraph of this connectivity section.
 - c. The SSP shall be developed to provide for DelDOT Local or higher order road spacing through the SSP Area at distances not exceeding 2640 feet (1/2 mile).
 - d. A portion of a local or higher order road may need to be constructed through the Applicant's site based on the spacing of existing roadways, and of roadways proposed in Approved Local Transportation Circulation Plans.
7. DelDOT Subdivision Streets - Information and Requirements.
- a. The subdivision street system shall allow multi-modal access and multiple routes from each development to existing or planned neighborhood centers, parks and schools, without requiring the use of Local and higher order roads, unless DelDOT has made an Infeasibility Determination.
 - b. **Type III Subdivision Streets** –
 - The SSP shall be developed to provide for Type III Subdivision street spacing through the SSP Area at distances not exceeding 1320 feet (1/4 mile) unless DelDOT has made an Infeasibility Determination.
 - c. **Type I and Type II Subdivision Streets, Industrial Streets** - The Applicant shall show on the SSP and, if not currently existing, construct streets in the following fashion:
 - *Residential, Commercial and Mixed-Use Development or Redevelopment* – Type I and Type II Subdivision or, if applicable, Industrial street connections shall be spaced at intervals of no more than 660 feet as measured from the near side right-of-way line, unless DelDOT has made an Infeasibility Determination.
 - *High Density Residential or High Density Mixed Use Development* – Subdivision street connections at intervals of no more than 330 feet shall be provided in areas planned for the highest density residential and mixed-use development. Where the street pattern in the area immediately surrounding the site meets this spacing interval, the existing street pattern should be extended into the site.
 - *Large Lot Subdivisions* – The above provisions notwithstanding, subdivisions with lot sizes of one acre or more may use a Type I and Type II subdivision street spacing of up to 1,320 feet.
8. Bicycle and Pedestrian Connectivity
- Existing and proposed bicycle and pedestrian

connections shall also be shown on the SSP as provided in Section 3.5.4.

9. Transit Connectivity

Existing and proposed transit stops, shall also be shown on the SSP with applicable bicycle and pedestrian connectivity as provided in Section 3.5.5.

10. SSP Roadway Construction

- The Applicant shall show on its site plan and construct all proposed roadway segments, or portions of roadway segments, noted on the SSP that traverse the Applicant's property and have a DelDOT classification level of Major Arterial or below.
- The Applicant shall provide a dedication of Right-of-Way for any roadway designated above a Major Arterial on its site plan and shall construct a collector roadway within that right-of-way unless DelDOT determines such construction to be unnecessary.

11. Local concurrence with an SSP that calls for future connection or construction of local or higher order roads.

For DelDOT to approve an Applicant's site access or provide a Letter of No Objection based on a SSP prepared by the Applicant, the Applicant must demonstrate that the local land use agency is in agreement with the provisions of the site street plan. The local land use agency approval must be sufficient to deem the SSP an Approved Local Transportation Circulation Plan or an acceptable amendment to an existing Circulation Plan.

3.5.4 BICYCLE AND PEDESTRIAN SPACING AND CONNECTIVITY

3.5.4.1 Bicycle Compatibility

Bicycles shall be accommodated on all Subdivision and higher order roads within the proposed development in accordance with standards provided in *AASHTO's Design Guidelines for Bicycles*.

3.5.4.2 Sidewalks

1. Sidewalks shall be installed along all DelDOT Arterial, Collector, and Local roadway frontage of the proposed development by the owner or Applicant. DelDOT may require a shared use path be installed at such locations in lieu of a sidewalk.
2. For residential subdivisions and developments in developed, developing and planned development areas:
 - a. The Applicant shall provide sidewalks along both sides of subdivision streets where the development has a net density of three dwelling units or greater, or DelDOT determines, in its sole discretion, that sidewalk would connect the development to transit or other local destinations;
 - b. The Applicant shall provide sidewalks along both sides of development project streets where the development has access to transit or is of such a nature that it is reasonable to assume, as determined by DelDOT, that it will attract pedestrians;
 - c. The Applicant shall provide sidewalk along at least one side of a street for a residential subdivision or development that does not meet the density standards in paragraphs a and b.
 - d. Other paragraphs of this section notwithstanding, no sidewalk shall be placed in along any street that DelDOT determines, in its sole discretion, has physical or environmental constraints.
3. For residential subdivisions and developments in rural areas sidewalk shall only be placed in those locations that DelDOT determines are, or will be at some future time, necessary to make pedestrian connections to transit or to land uses that are likely to attract pedestrian traffic.
4. Sidewalk easements. The Applicant shall provide sidewalk easements as necessary to DelDOT along residential subdivision street or development street frontage for those locations where DelDOT is not requiring the installation of sidewalk at the time of the development's construction.

5. Sidewalks shall be constructed in accordance with Chapter 5 DelDOT standards and shall meet Americans with Disabilities Act requirements. Sidewalk widths may be widened to provide for a shared-use path if determined or approved by DelDOT.
6. Sidewalks shall be separated from the edge of road, pavement, driveways, and site entrances in accordance with Chapter 5 of this manual. Where a sidewalk is planned to adjoin the pavement edge of parking lot areas, such sidewalk shall be grade-separated from the parking lot surface by at least a six-inch vertical face curbing.
7. Sidewalks shall be free of utility poles, bushes, plants, and all other obstructions.

3.5.4.3 Walkways

All development in commercial and mixed use developments, and other development for which a conditional use approval is required by the land use authority, should provide a system of internal pedestrian connections to encourage safe and convenient pedestrian movement within the site. These pedestrian connections, known as walkways, should also link the site with the public street sidewalk and shared-use trail system.

Walkways are recommended between parts of a site where the public is invited or allowed to walk. Walkways should be included as part of office/warehouse and retail/warehouse combinations. Walkways are not recommended between buildings or portions of a site such as truck loading docks and warehouses that are not intended or likely to be used by pedestrians.

Locating Walkways - A walkway into the site should be provided for every 330 feet of street frontage or for every eight aisles of vehicle parking if parking is located between the building and the street, whichever is lesser. A walkway should also be provided to any sidewalk or access-way abutting the site.

Walkway Connections - Walkways should connect building entrances to one another and from building entrances to adjacent public

streets and existing or planned transit stops. On-site walkways should connect with walkways, sidewalks, bicycle facilities, alleyways and other bicycle or pedestrian connections on adjacent properties used or planned for commercial, multifamily, institution, or park use. DelDOT may request connections to be constructed and extended to the property line at the time of development.

Walkway Routing - Walkways should be as direct as possible when connecting. Driveway crossings should be minimized. Internal parking lot circulation and design should provide reasonably direct access for pedestrians from streets and transit stops.

Walkway Design - Walkways should be paved and should maintain at least five feet of unobstructed width. Walkways bordering parking spaces should be at least seven feet wide unless concrete wheel stops, bollards, curbing, landscaping, or other similar improvements are provided which prevent parked vehicles from obstructing the walkway. Stairs or ramps should be provided where necessary to afford a reasonably direct route. The slope of walkways without stairs should conform to DelDOT standards. Walkways should be differentiated from parking areas and circulation aisles by grade, different paving material, landscaping or other similar method.

Walkway ADA Compliance - The Americans with Disabilities Act (ADA) contains different and stricter standards for some walkways. The ADA applies to the walkway that is the principal building entrance and walkways that connect transit stops and parking areas to building entrances. Where the ADA applies to a walkway, the stricter standards of ADA should be applied.

3.5.4.4 Access-ways

Access-ways shall be used to provide bicycle and pedestrian passage between streets, and/or existing or proposed trails when the spacing between streets is inadequate to accommodate convenient pedestrian and bicycle travel. Access-ways are similar to walkways constructed in commercial or mixed use developments but are

generally wider so as to accommodate bicycle traffic in residential areas. A shared-use trail may be identified within a development project as an access-way however access-ways will typically carry less traffic, be less wide and require less total right-of-way than a shared-use trail. Access-ways differ from sidewalks in that they do not generally run along the right of way of roads and streets.

Access-ways shall be provided as part of all new developments and redevelopments where the net dwelling unit density is greater than 1 dwelling unit per acre.

Access-ways shall be provided for pedestrians and bicycles on public easements or rights-of-way where full street connections are not possible, with spacing between full street and access-way connections of no more than 330 feet, except where prevented by topography, barriers such as buildings, railroads or freeways, or environmental constraints such as major streams and rivers (all collectively to be called “constraints”).

Access-way Width and Right-of-Way - The width of the right-of-way for Access-ways must be sufficient to accommodate expected users, and provide a safe environment, taking into consideration the characteristics of the site and vicinity, such as the existing street and pedestrian system improvements, existing structures, natural features, and total length of the access-way connection.

Access-ways generally shall be set at a width of 8 feet, with a total right-of-way of 28 feet.

If, due to constraints, a full width access-way cannot be provided, the maximum access-way width and right-of-way given the constraints shall be provided, but shall in no case be less than a minimum of five feet, with a 25-foot-right of way.

Access-ways shall be provided as follows:

- If due to constraints any block that is longer than 660 feet as measured from the near side right-of-way line of the subject street to the near side right-of-way line of the adjacent

street, an access-way shall be required through and near the middle of the block.

- If due to constraints, any block is longer than 1,320 feet as measured from the near side right-of-way line of the subject street to the near side right-of-way line of the adjacent street, then two or more access-ways may be required through the block.
- Where a street connection is not feasible, one or more new access-ways to the following shall be provided as a component of the development: an existing transit stop, a planned transit route as identified by DTC and/or DelDOT, shopping center or a community facility. The access-way shall be reasonably direct.
- DelDOT, in consultation with the applicable land use agency, may require an access-way to connect from one cul-de-sac to an adjacent cul-de-sac or street.
- In a proposed development or where redevelopment potential exists and a street connection is not proposed or possible, one or more access-ways may be required to connect a cul-de-sac to public streets, to other access-ways, or to the project boundary to allow for future connections.
- A new access-way to a school shall be provided as a component of a development proposal if the addition of an access-way would reduce walking or bicycling distance by at least 50 percent over other available sidewalks, walkways or access-ways and the reduced walking or bicycling distance is greater than 200 feet.

Access-way Design Standards – Access-ways shall be as short as possible and wherever practical, straight enough to allow one end of the path to be visible from the other.

Access-ways shall be located to provide a reasonably direct connection between likely pedestrian and bicycle destinations.

Access-ways through parking lots should be physically separated from adjacent vehicle parking and parallel vehicle traffic through the use of curbs, car stops, landscaping, trees, lighting,

and such other methods as may be desirable, if not otherwise provided in the parking lot design.

Where possible, access-ways shall converge with streets at traffic-controlled intersections for safe crossing.

3.5.4.5 Roadway Crossing by Bicycles and Pedestrians

The Applicant shall be required to install marked crosswalks, which function to create a visual and tactile connection between barrier-free access curb ramps for the purpose of demarcation of appropriate pedestrian and bicycle street-crossing locations in the following instances:

- At points of intersection between sidewalk and major collector and arterial streets and at all corners along a major collector or arterial street where subdivision streets intersect the collector or arterial street.
- At all signalized intersections adjoining the development site.
- At key locations to provide marked street crossing access to active or passive parkland and open space areas, schools, playgrounds, neighborhood shopping centers, transit and similar pedestrian destinations within and adjoining the development site.
- *Pedestrian Refuge* – If at all feasible, pedestrian refuge areas shall be constructed across roadways of 4 or more travel lanes at key locations where a marked crosswalk is to be installed.

3.5.5 TRANSIT FACILITIES

The Applicant shall identify all existing or proposed transit facilities on the SSP.

3.5.5.1 Major Industrial, Institution, Retail, and Office Developments

Industrial uses, office, institutional uses or retail establishments larger than 150,000 s.f. shall provide either a transit stop on site or

adjacent to the site, or a pedestrian connection to a transit stop.

Pedestrian connections shall be made to any transit facility within 1,320 feet of the boundary line of a site. The connections should take the most direct route practicable. Users should be able to see the ending of the connection from the entrance point, if possible.

Transit Stops. If transit service exists along the frontage of the development, or if, after consultation with DTC, it is determined that the development is a feasible candidate for transit service, and there is no existing transit stop within 1,320 feet of the site, pedestrian routes and transit facilities shall be designed to support transit use through provision of improvements. These improvements may include passenger shelters, landing pads, walkways to the transit stop location, or some combination thereof, as required by Delaware Transit Corporation or DelDOT, in consultation with the applicable land use authority

3.5.5.2 Residential Developments

1. **School and Transit Bus Stop Requirements** – All subdivision and residential site development proposals involving more than 50 dwelling units shall be required to designate and reserve locations for transit and school bus stop accommodations within and/or adjacent to the proposed development, as directed by DelDOT or DTC.
2. **School Bus Stop Locations** – The following specifies school bus stop locating procedures:

The developer shall notify the local public school district of the location, character and layout of the proposed subdivision or residential site development as early as possible in the plan development process, but in any case, by registered mail no later than 30 days prior to the date of the public meeting at which such proposal will be considered for approval. The purpose of this notification is to offer the local public school district the opportunity to provide input and direction with respect to the most appropriate and serviceable location for school bus stops

within the proposed development. If available, the applicant/ developer shall use a School District Notification Form provided by the local jurisdiction developed for this purpose.

- a. The local public school district shall have at least 30 days to provide commentary to both the applicant/developer and to the local jurisdiction with respect to school bus stop provisions. Such commentary shall describe preferred locations of bus stops within and adjoining the proposed development site. Should the local school district choose not to respond within the prescribed period, the development proposal may proceed through the review and approval process.

3.5.5.3 Public Mass Transit Provisions

As part of the plan review process, a copy of the proposed subdivision plan or residential site development plan shall be provided to the Delaware Transit Corporation or its authorized designee, for review and recommendations relative to the reservation and designation of areas for public mass transit stops and related provisions. Review commentary and recommendations shall be offered during the normal plan review period prescribed by this ordinance. A delay in the issuance of review commentary by the Delaware Transit Corporation, shall not result in a postponement of the plan review process.

3.5.5.4 Transit at Mixed – Use Centers

To facilitate transit usage and circulation, Mixed-Use Centers should provide transit stops at key nodes with easy access to the surrounding thoroughfares. Transit routes through the Mixed-Use Center shall be designed to accommodate the technical requirements of bus operations. Transit easements through and within mixed use centers shall be provided as requested by DTC. A coherent and easily maneuverable path through the Mixed-Use Center should be designed to permit transit to move freely and efficiently throughout the mixed-use center.

3.5.5.5 Bus Stop Design Criteria

1. Local and Minor Collector Streets.

The following specifies bus stop design and construction for local and minor collector streets:

- a. On local and minor collector streets, bus stops shall consist of designated curbside bus stops where transit and school buses may stop within the travel lane of the street for the purpose of boarding and discharging passengers. Every effort shall be made to designate such bus stops as joint use facilities for use by school bus and transit service vehicles.
- b. On-Street Bus Stop. On-street bus stops served by the Delaware Transit Corporation or its authorized designee, shall be designated by standard Delaware Transit Corporation bus stop identification signage and shall conform to one of the following design standards:
 - The bus stop is designated adjacent to and immediately before a street intersection. This configuration may be preferable at locations involving very limited right-turning traffic volumes. The near-side bus stop shall be at least 90 feet in length or an alternative length specified by the Delaware Transit Corporation; or
 - The bus stop is designated adjacent to and immediately after a street intersection. This configuration may be preferred in locations where there are high volumes of right-turning traffic, at locations immediately following a right-turn by the bus and where significant numbers of passengers would transfer from an intersecting bus route. The far-side bus stop shall be at least 80 feet in length or an alternative length specified by the Delaware Transit Corporation; or
 - The bus stop is designated along the curbside in locations between and separated from intersecting streets. The mid-block bus stop shall be at

least 130 feet in length or an alternative length specified by the Delaware Transit Corporation.

2. Bus Stop Design Criteria - Local or Higher Order Roads.

The following specifies bus stop design and construction for arterial and major collector roads:

- Where required by the Delaware Transit Corporation or requested by the local school district, bus stops on arterial and major collector roads shall be designed as Bus Turnout Areas. These areas consist of a pull-off area of sufficient dimensional attributes to permit a bus to pull over to the curbside and out of the travel lane for purposes of boarding and discharging passengers.
- Bus Turnout Areas shall be designed as integral features of the pedestrian sidewalk network and shall conform to design and minimum dimensional requirements.
- Every effort shall be made to designate planned Bus Turnout Areas as joint use facilities for both school bus and transit service vehicles.

Bus turnout areas shall be required when:

- a. Peak hour curb lane traffic count exceeds 250 vehicles per hour; and
- b. Existing land development patterns and the local street system does not permit continuous internal neighborhood circulation and linkage for transit service off of arterial and/or major collector streets; and
- c. The nearest existing Bus Turnout Area or similar transit facility is more than 1,320 feet (1/4 mile) walking distance from the main entrance of the proposed subdivision.

3.5.6 INTRA-CONNECTIVITY

In addition to minimum roadway spacing requirements, the Applicant shall demonstrate that the proposed development will provide adequate connectivity by calculating the project's connectivity ratio.

a. Minimum Required Connectivity Ratio.

All Site Street Plans shall demonstrate that the proposed subdivision street system will achieve a **connectivity ratio of 1.4 or greater**.

b. Connectivity Ratio Calculation.

The connectivity ratio is determined by dividing the number of street segments (street sections between intersections and/or cul-de-sac ends) by the number of intersections and cul-de-sac ends. For purposes of this calculation, proposed street intersections with existing roads and stub roads for future access to vacant developable lands shall count as 0.5 intersections.

c. Connectivity Ratio for Phased Development

If a subdivision is planned to be constructed in distinct development phases, then the Site Street Plan shall demonstrate that the initial phase individually and in conjunction with all subsequent phases, will achieve and maintain the minimum connectivity ratio requirement.

d. Recordation of Connectivity Ratio

The Record Subdivision Plat shall reflect compliance with the minimum connectivity ratio requirement.

3.5.7 INTERCONNECTIVITY

Linkages shall be provided among adjoining subdivisions in order to allow convenient and effective travel among neighborhoods. Benefits include ease of access, association with neighbors, alternative travel routes for residents, sidewalk networks on local streets and internal circulation routes for service providers such as school buses, sanitation vehicles, and emergency management personnel.

3.5.7.1 Linkages to Existing Adjacent Developments with no Connection

When proposed development is being planned adjacent to previously developed land and the previously developed land has not incorporated linkage street stubs to its perimeter as part of its recorded plan, the proposed development shall provide access-way connections if at all possible.

If required by DelDOT, the Applicant shall provide right of way for a future access-way connection, and/or a full street connection, within the span of each such property boundary line.

3.5.7.2 Linkages to Existing Adjacent Developments with Connection

When proposed development is being planned adjacent to previously developed land and the previously developed land has incorporated linkage street stubs to its perimeter as part of its recorded plan, the proposed development must incorporate street connections to the existing linkage street right-of-way stubs as part of its street system.

1. **Sidewalk Interconnections.** All development plans shall provide for sidewalks along future public street connections to adjacent developable parcels along each property boundary that abuts potentially developable or re-developable land in accordance with the provisions for sidewalks.
2. **Access-ways or Walkways** for bicycles, pedestrians, and emergency vehicles shall connect the on-site circulation system to existing adjacent bicycle and pedestrian connections, and to entrances open to the public that abut the property. Connections may approach parking lots on adjoining properties if the adjoining property used for such connection is open to public pedestrian and bicycle use, is paved, and is unobstructed.

3.5.7.3 Linkages to Undeveloped or Re-developable Property

Where abutting properties are undeveloped or can be expected to be redeveloped within the next ten years, the location and potential arrangement of streets, bicycle and/or pedestrian connections shall be provided at the following spacing to provide for the continuation of these connections into surrounding areas:

1. **Subdivision Street Type I and II Interconnections.** All development plans shall provide for linkage street stubs at a ratio of one per 660 linear feet of the boundary line or fraction thereof, which adjoins potentially developable or re-developable land.
2. **Subdivision Street Type III or Higher Order Road.** All development plans shall provide for future public street connections to adjacent developable parcels by providing a collector road street connection as a continuation of the site circulation and spaced at intervals: 1) in accordance with an approved DelDOT and County local traffic circulation plan; or 2) if no such plan exists, not to exceed 1320 feet along each development plan boundary or as measured from the nearest parallel collector road to the site.
3. **Development Adjacent to Vacant Land.** Where new development is adjacent to vacant land likely to be subdivided in the future, all streets, sidewalks bicycle lanes, and access-ways in the development's proposed street system shall continue through to the boundary lines of the area under the same ownership as the subdivision, if directed by DelDOT or the appropriate land use agency to provide for the orderly subdivision of such adjacent land or the transportation and access needs of the community.
4. **Redevelopment Projects.** All redevelopment projects shall retrofit existing streets to provide increased vehicular and pedestrian connectivity.
5. **Sidewalk Interconnections.** All development plans shall provide for sidewalks along future public street connections to adjacent developable parcels along each development plan boundary that abuts

potentially developable or re-developable land in accordance with the provisions for sidewalks.

6. **Walkway and Access-way Interconnections.** All development plans shall provide for future public walkways and/or access-ways, as applicable, to connect to adjacent developable parcels by providing such connections as a continuation of the walkways or access-ways provided for the development in accordance with the walkway and access-way standards for each development plan boundary that abuts potentially developable or re-developable land.
7. **Stub Street Turn-Around Area.** The right-of-way stubs shall be planned and constructed to the subdivision boundary line for future connections as outlined in Section 5.1.4.2., Temporary Dead End Streets.

3.5.7.4 Cross-Access Interconnectivity

Developments should minimize or eliminate curb cuts along adjacent streets. Where possible, vehicular access should be shared with the adjacent properties and/or alleys should be used for access.

1. **Cross-Access Requirement.** In order to reduce dependency on vehicular access to major collector streets and to promote efficient and convenient access to destination points along roadway corridors, shared entrances, cross-access easements, connecting driveways and street linkages are required wherever practicable.
2. **Aisle length between Cross-access and Street.** A minimum distance of 60 feet shall be required between a cross-access-way and an intersection or driveway entrance to allow for car storage between the cross-access and the driveway.
3. **Cross-Access Types and Locations.** Locations and types of cross-access will vary from site to site and are dependent upon a number of factors including: overall size of the properties involved, building types and land uses of the properties being served, locations of the existing and

proposed buildings, locations of existing and proposed parking lots and site utility and landscape requirements.

4. **Non-residential, Mixed Use and Multi-family Housing.** Each property containing or designated for nonresidential or multi-family dwelling units should provide at least one vehicular access to each abutting property. This should most often be accomplished by joining adjacent parking lots and sharing entrances.
5. **Recordation.** Cross-access easements shall be shown on the site plan for the development and recorded at the applicable local recordation office.
6. **Cross-Access Construction.**
 - a. Development plans shall indicate the location of cross-access easement(s).
 - b. The access connection shall be completed if an immediate or near term benefit (as determined by DelDOT) can be derived by completing the link.
 - c. If no immediate or near term benefit would be derived, development plans should provide cross access and construction easements and arrange the site design so that when the adjoining property owner extends the connection to the property line, the link will be completed. If the link is to be completed in the future, the grade of the connection, parking, landscaping and other improvements must be set to allow for extension into the adjacent lot.
7. **Internal Access Driveways.** Whenever possible, internal access drives should be located to join together existing public streets and/ or connect to adjacent private drives so that the internal circulation functions as an integral part of the surrounding transportation network.
8. **Waiver.** When cross-access is deemed impractical by DelDOT on the basis of topography, the presence of natural features, or vehicular safety factors, this requirement may be waived provided that appropriate bicycle and pedestrian connections are provided between adjacent developments or land uses.

3.5.7.5 Street and Bicycle and Pedestrian Connection Hindrances

1. Street, bicycle, and/or pedestrian connections are not required where one or more of the following conditions exist:
 - a. Where a community facility location, or physical or topographic conditions make a general street, access-way or walkway connection impracticable. Such conditions include but are not limited to the alignments of existing connecting streets, freeways, railroads, slopes in excess of DelDOT standards, wetlands or other bodies of water where a connection could not reasonably be provided;
 - b. Existing buildings or other development on adjacent lands physically preclude a connection now and in the future, considering the potential for redevelopment; or,
 - c. Where the installation of a street, bicycle, and/or pedestrian connections would violate provisions of leases, easements, covenants, or restrictions written and put into affect prior to the effective date of these regulations.
2. DelDOT shall make the final determination as to whether or not a connection shall be made.

3.5.8 ALTERNATIVE COMPLIANCE

It is recognized that it may not always be possible for an Applicant to provide all of the street, bicycle, and transit connections required in Section 3.5 of this Chapter. DelDOT is amenable to working with developers and engineers to address special conditions which may be present so as to necessitate the use of alternative methods of compliance. Specifically, upon request by an applicant, DelDOT may approve an alternative SSP which may not fully comply with the requirements of Section 3.5, if that alternative SSP provides connectivity consistent with Section 3.5.8.2.

3.5.8.1 Procedure

Alternative compliance development plans shall be prepared and submitted in accordance with submittal requirements for plans as set forth in this Chapter. The plan and design shall clearly identify and discuss the modifications and alternatives proposed and the ways in which the plan will better accomplish the purpose of this Chapter than would a plan which achieves strict compliance with the specific standards of this Chapter.

3.5.8.2 Review Criteria

To approve an alternative plan, DelDOT must first find that the proposed alternative plan:

- Has a minimum connectivity ratio of 1.4; and
- Accomplishes the purposes of this Connectivity Section equally well or better than would a plan and design which complies with the standards of the Manual; and
- That any reduction in access and circulation for vehicles maintains facilities for bicycle, pedestrian, and transit, to the maximum extent feasible.

In reviewing the proposed alternative plan, DelDOT shall take into account whether the alternative design: minimizes the impacts on natural areas and features; fosters non-vehicular access, enhances neighborhood continuity and connectivity; and provides direct, sub-arterial street access to any parks, schools, neighborhood centers, commercial uses, and employment uses, within or adjacent to existing or future adjacent development within one mile.

3.5.9 DEVELOPER SSP CHECKLIST

Developers should assess the checklist that follows early during the site street plan development. The questions that follow can help design professionals create site plans that meet the connectivity requirements of this section.

Overall System Review

- Has the Plan attained required Connectivity Index minimums?
- Have all adjacent stub streets been identified and connected?
- Does the plan meet ADA standards?
- Are utilitarian paths direct? Do they provide for connections to pedestrian magnets nearby? Can pedestrians take advantage of "shortcut paths" that encourage walking instead of driving?
- Does the pedestrian system consider the type and probable location of future development on adjacent or nearby parcels of land? Is there flexibility to provide direct connections to adjacent parcels; should that be desired in the future?
- Are building entrance areas convenient to the pedestrian? Are they clearly evident through design features, topography, signing, or marking?
- Are walkways along the street buffered from traffic as much as possible?

Travel Safety

- Are crossings of wide expanses of parking lot held to a minimum? Are pathways generally visible from nearby buildings and free from dark, narrow passageways?
- Are sight lines at intersections adequate for pedestrian and motorist visibility? Are pedestrians able to see on-coming traffic, given typical speeds?
- Do Access-ways and Walkways lead to road crossing points with the least conflict?
- In general, are pedestrian/vehicle conflict points kept to a minimum?

Are pedestrians given adequate time to cross the road at signalized intersections?

3.6 RIGHT-OF-WAY

DelDOT has jurisdiction over the public right-of-way, which provides for pavement, drainage, pedestrian facilities, lighting,

landscaping and the roadside. The applicant's engineer is responsible for defining and verifying the existing right-of-way and/or easements on State-maintained roadways. The right-of-way must be evaluated to determine if the existing width can accommodate the construction and maintenance of any improvements within the right-of-way. DelDOT must approve the placement of anything within the right-of-way.

3.6.1 SITE PLAN RIGHT-OF-WAY

A plan showing the right-of-way for the street system and dedicated right-of-way for the existing State-maintained roadway shall be drawn in accordance with the requirements of the local land use agency. The widths of the right-of-way shall be in accordance with Figure 3-2.

Figure 3-2 Minimum Right-of-Way Width

Roadway Type	Minimum Right-of-Way Width
Subdivision Street – Type I *	50 feet
Subdivision Street – Type II, III *	60 feet
Industrial Street (plus 15 foot wide storm drainage easement on both sides)	60 feet
Local Road	60 feet
Collector (Major and Minor)	80 feet

**Provide an additional ten-foot drainage easement for subdivision streets with open drainage.*

Note: *At intersection streets the right-of-way shall have a minimum radius of 25 feet, concentric to the edge of pavement.*

3.6.2 CONTROL OF RIGHT-OF-WAY

The site plan shall contain one of the following notes relative to future maintenance of the internal street system:

- State Maintenance – Subdivision streets constructed within the limits of the right-of-way dedicated to the public use shown on this plan are to be maintained by the Delaware Department of Transportation (DelDOT) following the acceptance of the streets. DelDOT assumes no maintenance responsibilities within the dedicated street right-of-way until the streets have been accepted by DelDOT.
- Private Streets – Maintenance of the streets within this subdivision shall be the responsibility of the Developer, the property owners within this subdivision or both (Title 17, Section 131). The State assumes no responsibility for the future maintenance of these streets.

3.6.3 ACCEPTANCE OF RIGHT-OF-WAY DEDICATED TO THE PUBLIC USE

DelDOT will only accept the maintenance of roadways with right-of-way dedicated to public use. The dedication of right-of-way shall be approved by the State prior to recording the plan by the local land use agency.

Following recordation of the plan, no construction shall take place within the limits of the dedicated right-of-way without the written permission of DelDOT.

The maintenance responsibility of DelDOT within the dedicated right-of-way is outlined in Chapter 6.

3.6.4 RIGHT-OF-WAY MONUMENTS

The developer shall be required to furnish and place right-of-way monuments on the dedicated subdivision street right-of-way in accordance with these *Standards and*

Regulations for Subdivision Streets and State Highway Access, and the requirements of the land use agency. If there is no local ordinance concerning right-of-way monuments, the monuments shall be placed along the right-of-way lines, on one side of the street at every change in horizontal alignment.

Right-of-way monuments shall be placed to provide a permanent reference for re-establishing the centerline and right-of-way line. Right-of-way monuments shall be set and/or placed by a Professional Land Surveyor (PLS) licensed in Delaware. Right-of-way monuments shall be located and punched so the center is on the right-of-way line. Details of standard right-of-way monuments are shown in DelDOT's Standards Construction Details.

3.6.5 DEDICATION OF RIGHT-OF-WAY

The subdivision of property, a change in land development, a change in land use, or modifications of existing or new access adjacent to a State-maintained roadway is subject to a dedication of right-of-way sufficient to provide a total roadway right-of-way in accordance with the minimum standards shown in Figure 3-3.

This width provides for future roadway improvements to accommodate the forecast traffic based on the site plan and the local land use agency's comprehensive plan. Figure 3-4 shows typical sections for various road types.

To meet DelDOT's multi-modal initiatives, a 15-foot easement beyond the minimum right-of-way, listed in Figure 3-3, must be dedicated to provide for multi-modal infrastructure. The need for the easement will be determined during DelDOT's review.

If the right-of-way for the State-maintained roadway was acquired as a permanent easement, then the right-of-way dedication will be from the centerline along with the following note:

"A X-foot wide strip of right-of-way is hereby dedicated to public use as per this plat."

If the right-of-way for the State-maintained roadway was acquired in fee, then the right-of-way dedication will be from the existing right-of-way line along with the following note:

“An additional X-feet of right-of-way is hereby dedicated to public use as per this plat.”

The applicant’s engineer shall verify how the right-of-way was acquired for the road in order to determine which dedication note to use.

DelDOT cannot require a dedicated right-of-way along a State-maintained roadway for a minor subdivision plan for farms that are (1) subdivided into smaller farms, and (2) subdivided merely for the purpose of transferring land to family members for their use as a primary residence or residences. The right-of-way that would normally be dedicated shall be reserved in accordance with section 3.6.6.

3, the portion adjacent to proposed subdivisions shall be reserved for future right-of-way.

Set back requirements by the local zoning code are to be measured from the reserved right-of-way line.

3.6.7 REDUCED RIGHT-OF-WAY

Upon request, DelDOT shall consider a reduction in the required right-of-way for subdivision streets. DelDOT shall accept the maintenance of subdivision streets with reduced right-of-way as outlined in Chapter 6.

Reduction in right-of-way is intended to permit greater flexibility in community design while retaining adequate safeguards to provide the traveling public with sufficient travelway for anticipated traffic.

Figure 3-3 Minimum Standards for Total Roadway Right-of-Way

Department of Transportation Functional Classification Map	Minimum Dedicated Right-of-Way
Freeway or Expressway Principal Arterial	50 feet of right-of-way from 1) Inside edge of travelway on divided highway, or 2) Centerline on multi-lane undivided or two-lane highway.
Minor Arterial Major or Minor Collector	40 feet of right-of-way from centerline.
Local Road or Street (All roads other than Subdivision Streets not shown)	30 feet of right-of-way from centerline.

3.6.6 RESERVATION OF RIGHT-OF-WAY

Where DelDOT has established future right-of-way lines beyond what is shown in Figure 3-

Reduced right-of-way can be applied to:

- Streets that are dedicated to public use and shall not require widening due to future land development.
- Areas where upright or barrier-type curbs and gutters are utilized along all interior streets.

- Group, semi-detached, two-family, and single family dwellings constructed on fee simple lots.
- Subdivision streets Type I.
- Areas where the site plan has incorporated the use of alleys to serve as the major access to the lots.

DelDOT shall only consider a reduced right-of-way if the following criteria are met:

1. Proposed reduced right-of-way is consistent with the local land use agency's ordinances.
2. The reduced right-of-way line shall be located at the back of the curb. The minimum reduced right-of-way width shall be 26 feet.
3. A 10-foot permanent easement shall be provided along each side of all streets on a lot to allow DelDOT personnel to undertake routine and emergency maintenance work and shall also be available for utility and construction purposes, and permanent placement of signs and traffic control devices.
4. On-street parking within the reduced right-of-way shall be reduced by providing:
 - Two spaces (minimum) on each lot; and
 - One space per every three units (overflow parking) which may be provided within the public right-of-way. The number and location of overflow parking within the public rights-of-way shall be subject to DelDOT approval. These parking bays are perpendicular and shall be graded wherever possible to slope toward the street. Regardless of the slope, away from or toward the street, a concrete gutter shall be required along the street right-of-way line for carrying stormwater flow, creating a physical separation of streets from parking bays and demarcation of the reduced right-of-way. Sidewalks shall be constructed parallel to the curb line. The barrier type around the perimeter of the parking bays (when required) shall be subject to DelDOT approval.

5. Whenever possible, all utilities, except for surface drainage appurtenances, shall be located outside the right-of-way.
6. Turnarounds, independent of the parking bay areas, must be provided at the end of the streets to permit maneuvering of service and emergency vehicles.
7. Any utility work within the permanent easement shall proceed only after prior notice of at least 24 hours has been given to DelDOT.

3.7 DELDOT NOISE POLICY

Any development proposed to be constructed in the proximity of any roadway with a functional classification of principal arterial, freeway or interstate will be required to perform a noise analysis and shall meet the requirements of DelDOT's Noise Policy No. D-03 (see Appendix L).

3.8 LANDSCAPING

Landscaping is an important aspect of the roadside. Street trees can be added within the right-of-way of a subdivision street under the following conditions:

1. The subdivision streets are designed using PCC Integral Curb and Gutter Type 3.
2. There is a minimum offset of four feet from the back of the curb to the trunk of the tree.
3. There is a note outlining the future maintenance of the trees on the record plan.
4. Trees are chosen from the approved list of street trees (see Appendix N for list of approved trees).
5. Placement of landscaping shall not impact sight distance.

Median islands within a subdivision may also be landscaped, provided the following criteria are met:

1. If street trees are proposed, the islands must have PCC Curb, Type 1 with an 8-inch vertical face.
2. If no street trees are being proposed, PCC Curb, Type 2 may be used.
3. There is a note outlining the future maintenance of landscaping on the record plan.
4. Placement of landscaping shall not impact sight distance.

See Chapter 10 and Appendix A of DelDOT's *Road Design Manual* for additional information.

3.8.1 REFORESTATION REGULATIONS AND ORDINANCES

The requirements established by these regulations, including but not limited to the right-of-way dedication/reservation, auxiliary lanes at the entrance, sight triangles, and drainage features, shall be incorporated into the site plan prior to any evaluation of tree impacts as required by the local land use agency.

3.9 OPERATIONAL ANALYSIS

To ensure safe access to all proposed land development plans, the developer may be required to prepare an operational analysis for review by DelDOT. This operational analysis may consist of but not limited to one or more of the following evaluations:

1. *Queuing Analysis* – This analysis may be required to determine whether existing and proposed left-turn lane at the site entrance and nearby intersections is adequate. The 95th percentile (98th percentile at signalized intersections) maximum queue shall be used for the purpose of this analysis.
2. *Highway Capacity Manual Analysis* – This analysis may be required to determine whether the operation of the site entrance and nearby intersections is adequate.

3. *Accident Analysis* – This analysis may be required if the entrance is proposed at a known or alleged high accident location to determine whether a problem exists, and if so, how the entrance might relate to the problem, and what remedies might be possible.

This information shall be used to determine what modifications or improvements need to be made to ensure safe access to the State-maintained roadway system.

3.10 AGREEMENTS

3.10.1 SIGNALS

The need for installation of new traffic control signals and/or the modification of existing traffic control signals to accommodate traffic from commercial establishments or subdivisions shall be determined by DelDOT in accordance with the warrants prescribed by the *Manual on Uniform Traffic Control Devices* (MUTCD). All costs, basic or incidental, to the construction, operation, or maintenance of the signal shall be borne by the applicant. Furthermore, the cost of modifications to the system which may be required in the future in order to provide for traffic to or from the roadside development shall be paid for by the applicant.

When DelDOT, in its sole discretion, determines that a traffic control signal may be required in the future, the developer shall enter into a signal agreement with DelDOT prior to obtaining a permit to construct the entrance. The agreement shall be kept on file by the DelDOT Traffic Section and used to assess costs when DelDOT finds it necessary to install or modify a signal at the location addressed in the agreement.

The following information must be supplied to the DelDOT Traffic Section for the preparation of the agreement. See Appendix I for a sample Traffic Signal Agreement Letter.

1. Name and address of the company or developer entering into the agreement.
2. Name and address of the development or subdivision.
3. Name of all intersections and/or streets affected (location of signal).
4. Name and title of the person who shall be signing the agreement.

Recording fees associated with signal agreements are to be paid by the developer. This fee shall be submitted to DelDOT with the executed agreement.

3.10.2 OFF-SITE IMPROVEMENT AGREEMENT

During the land development process, DelDOT may determine the need for road improvements beyond the entrance to the site. These improvements shall be required as part of the entrance approval. The developer shall enter into an agreement with DelDOT outlining the implementation of the improvements. This may be for the actual design, construction, and inspection of the improvements, or monetary contribution for the actual construction of the improvements. This agreement shall be executed prior to entrance plan approval. See Appendix B for regulations regarding improvements requiring new rights-of-way and

Appendix H for public road construction applications, forms and agreements.

3.10.3 TRAFFIC MITIGATION AGREEMENTS (TMAs)

Land use agencies may have adopted specific level of service or adequate facilities requirements. If these requirements cannot be met, the applicant may, through the local land use agency's process, seek a waiver from such level of service requirements. As a condition of such a waiver, a Traffic Mitigation Agreement between the applicant and DelDOT shall be executed. DelDOT's participation in such agreements shall not be unreasonably withheld.

3.11 TRAFFIC CALMING

Traffic calming shall be considered in the site street plan development. The circulation plan should identify areas when there is a potential for higher volumes of traffic and where traffic calming shall be considered.

DelDOT's Traffic Calming Design Manual (TCDM) provides detailed guidance regarding the appropriate use, design, signing and marking of traffic calming measures approved for use in Delaware.

Figure 3-4 Typical Section – Various Roadway Types
(Not to Scale)

